

AI Planning

Exercise Sheet 2

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Exercise 2.1

(a) Transform the operator

original

$$\langle \neg e \vee f, (a \triangleright (b \triangleright c)) \wedge (\neg d \triangleright c) \wedge (\neg(\neg c \wedge \neg a) \triangleright (d \wedge \neg d)) \wedge (d \triangleright \neg e) \rangle$$

(7)

$$\langle \neg e \vee f, ((a \wedge b) \triangleright c) \wedge (\neg d \triangleright c) \wedge (\neg(\neg c \wedge \neg a) \triangleright (d \wedge \neg d)) \wedge (d \triangleright \neg e) \rangle$$

(9)

$$\langle \neg e \vee f, (((a \wedge b) \vee \neg d) \triangleright c) \wedge (\neg(\neg c \wedge \neg a) \triangleright (d \wedge \neg d)) \wedge (d \triangleright \neg e) \rangle$$

(8)

$$\langle \neg e \vee f, (((a \wedge b) \vee \neg d) \triangleright c) \wedge (\neg(\neg c \wedge \neg a) \triangleright d) \wedge (\neg(\neg c \wedge \neg a) \triangleright \neg e) \wedge (d \triangleright \neg e) \rangle$$

(9)

$$\langle \neg e \vee f, (((a \wedge b) \vee \neg d) \triangleright c) \wedge (\neg(\neg c \wedge \neg a) \triangleright d) \wedge ((\neg(\neg c \wedge \neg a) \vee d) \triangleright \neg e) \rangle$$

2x deMorgan

$$\langle \neg e \vee f, (((a \wedge b) \vee \neg d) \triangleright c) \wedge ((c \vee a) \triangleright d) \wedge ((c \vee a \vee d) \triangleright \neg e) \rangle$$

(b) Transform the ENF operator

original

$$\langle \neg e \vee f, (((a \wedge b) \vee \neg d) \triangleright c) \wedge ((c \vee a) \triangleright d) \wedge ((c \vee a \vee d) \triangleright \neg e) \rangle$$

Exercise 2.2